

FLIGHT

The
AIRCRAFT
ENGINEER
&
AIRSHIPS

First Aero Weekly in the World

Founder and Editor : STANLEY SPOONER

A Journal devoted to the Interests, Practice, and Progress of Aerial Locomotion and Transport

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EDITORIAL COMMENT.



GOOD deal is being written at present on the subject of air lines and their operation, and it looks as if quite a campaign is under way with a view to securing the granting of further subsidies to Britain's Million Pound Monopoly Company, Imperial Airways, Ltd. On the one hand, it is maintained that, owing to the intense French competition, it is not possible to compete effectively under the present arrangement, and that more money is required for the purchase of new "Efficiency" machines, more suitable than those with which the flying is being carried on at present. On the other hand, there has recently been a good deal of complaint as to delays in starting and other shortcomings. Accounts have been published of passengers having been kept waiting at the terminal aerodromes for no apparent reason, while French machines were leaving to time and with full loads. Quite recently we ourselves have had occasion to sample the degree of "efficiency" which can sometimes be attained by a subsidised monopoly company. This occurred in connection with the French Grand Prix motor race at Paris. A package concerning this race was despatched by air on Monday of this week to our sister journal, the AUTO., and was timed to arrive at Great Queen Street by about 7.30 p.m. on Monday evening, the contents being urgently required for the issue of the AUTO. going to press on Tuesday evening. No package arrived during Monday, and telephone messages to the Croydon office of Imperial Airways only elicited the statement that the package would arrive at any moment. At 12 noon on Tuesday the Editorial department of the AUTO. was still without the package, and by this time it became necessary to close down for going to press. The package ultimately arrived at 5.20 p.m. on Tuesday afternoon. By ordinary post delivery would have been at about 8.15 a.m. on Tuesday morning! Further comment is unnecessary.

DIARY OF FORTHCOMING EVENTS

Club Secretaries and others desirous of announcing the dates of important fixtures are invited to send particulars for inclusion in the following list:—

1925

- July 26-Aug. 9 Vauville Light 'Plane and Glider Meeting.
- Aug. 1-3 Royal Aero Club Race Meeting at Lympne.
- Sept. 19-28 F.I.A. Conference at Prague.
- Oct. 8 Aero Golfing Soc. Autumn Meeting, Walton Heath.
- Oct. 24-29 Schneider Cup Race, Baltimore, U.S.A.

1926

- Aug. Light Aeroplane Competition.

We mention this case, not because it is in itself a very important one to anyone except our own organisation, but because it may serve to show what sort of delays are occurring. The instance may be an isolated one. We do not know, but we should rather doubt it. The delay was, obviously, connected with the ground transport end of the service, but that does not affect the argument except in so far as concerns the fact that, in this instance at any rate, the flying end of the service does not appear to come in for any criticism, since evidently the parcel had arrived at Croydon aerodrome some time during Monday afternoon. If, however, Imperial Airways desire to convince the public of the advantages of using the air, it would surely be policy to see that in so far as it rested with them the ground transport at least equalled that of the air.

With reference to the clamour for an increased subsidy, we very much doubt whether this will be forthcoming, nor do we think it is required. The terms upon which Imperial Airways were given their monopoly were distinctly generous, and if during the first year or so of operation the company is already in difficulties, then surely it is not because the money is insufficient, but because the problem is being attacked in the wrong way. It is just possible that one of the reasons for the present difficulties may be not unconnected with matters similar to the case we have just mentioned. Secondly, the London-Paris route has never been a favourable one for commercial aviation, and if Imperial Airways are really anxious to effect improvements they should look to other routes.

We should be the last to claim that the ideal commercial aeroplane has yet been found, but at the same time machines have improved very considerably since the days when the old A.T. and T. and Handley Page, Ltd., did their pioneer work on the cross-Channel services. Those early struggles, carried out with converted military aeroplanes, did serve to demonstrate that technically it was possible to operate air services with a fair degree of regularity. They also showed that almost from every point of view the London-Paris route was not a favourable one. Yet here we are still, in 1925, struggling along over the same route and with very little greater success than did those unsubsidised pioneers of early transport.

The production of more economical machines should be accelerated, certainly, but that in itself does not provide a solution of the problem, and in this connection it is of interest to note that the de Havilland Hire Service, which is entirely unsubsidised, has managed, and still, we believe, does so, to pay its way, not because the service employs machines which are vastly more economic—although they certainly are about as good commercial propositions as any hitherto produced—but because they are used in a way which enables a real saving in time to be effected. In operating the London-Paris route, air transport is competing with what is perhaps one of the most highly developed transport services in the world, and it is doubtful whether machines even twice as economic as those at present in use would enable a really satisfactory state of affairs to be attained. The

solution to the problem lies, we think, not in increasing an already generous subsidy, but in planning new routes in such a way that the aeroplane is able to give advantages which other transport cannot give. That certainly is not the case on the London-Paris route. We have made no reference to the London-Holland-Germany line because we gather that it is mainly the London-Paris route which is causing anxiety.

The Lympe Meeting

The August Bank holiday meeting, which is being held at Lympe, August 1, 2 and 3, can in some ways be said to mark a new era in British sporting aviation, since, for the first time in our aviation history, a number of races are to be flown by machines with engines of relatively low power. It is true that there are also events open to aeroplanes with powerful engines, but by far the greatest number of races will be for light 'planes, or, at any rate, for engines of relatively low power. The only other light 'plane race we have had so far was the meeting for the 1923 single-seaters, which was held at Hendon shortly after the 1923 Lympe meeting. This was a somewhat hurried affair, rushed through at short notice and inadequately advertised, so that the attendance was by no means a large one. Nevertheless, the races did awaken quite considerable interest, and showed that if we are to make air racing as popular as in the days before the war, the light 'plane offers a very excellent means of doing so. The relatively low speeds attained and the great manoeuvrability of light 'planes make it possible to fly races round pylons, and thus give the public an opportunity of following the race much more intimately than is possible with modern high-powered machines which pass in a flash. The Lympe meeting, which will include events for both single-seaters and two-seaters, ought to be well patronised, and although the Lympe aerodrome is somewhat inconveniently situated, so far as Londoners are concerned, it is, of course, quite close to the southern seaside resorts from which it is hoped that the general public will go to the aerodrome in considerable numbers during the August vacation. In some ways, possibly Hendon, Croydon, or Stag Lane would have been preferable, but Lympe has very many attractions from the competitor's point of view, there being ample hangar accommodation for the machines and repair facilities for engines, while the Lympe course is one which possesses fields suitable for forced landings at almost any point. Furthermore, although the races will not be around pylons in the good old-fashioned way, the machines will be flying over a comparatively short course, on which in reasonably clear weather they will remain in sight practically throughout, while the fact that the course is a short one of 12½ miles results in machines having to round the home turning point several times in each race, and that thus visitors are enabled to follow more closely the progress of the races. We advise all readers of FLIGHT who can possibly do so, to visit Lympe during the August Bank holiday.

First "Moth" for Flying Club

On July 21 Alan Cobham delivered, by air, the first of the D.H.60 "Moths" which are being supplied to the various light aeroplane clubs in England. It was one acquired by the

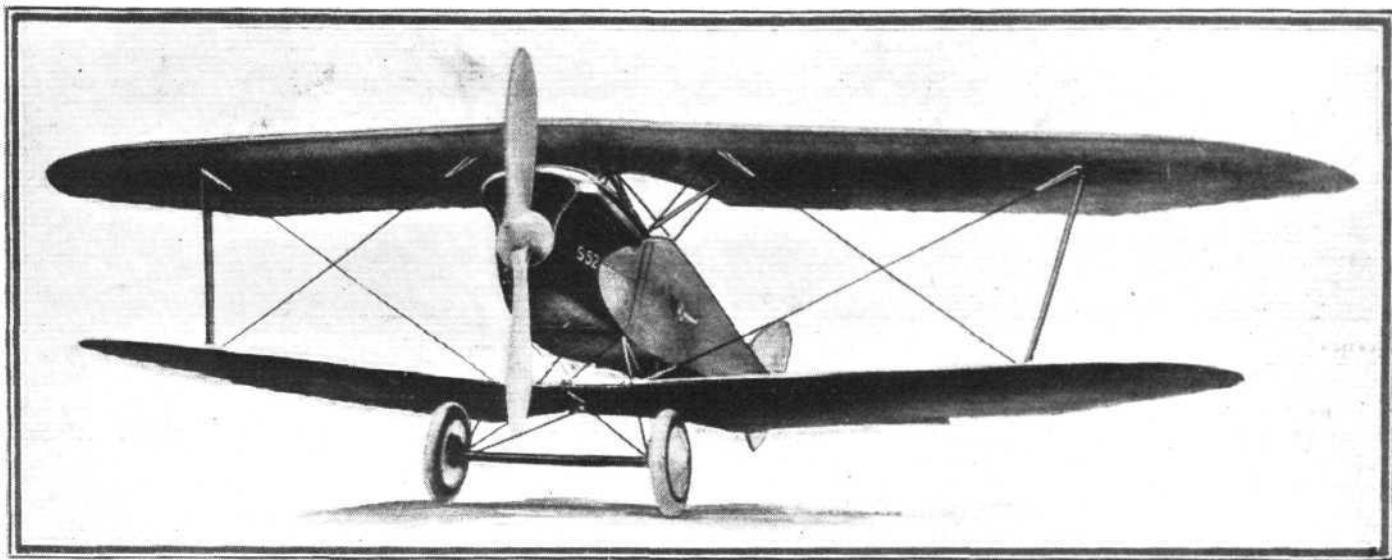
Lancashire Aero Club, and it was flown from Stag Lane to Woodford, near Manchester, a distance of 180 miles, in 1 hr. 50 mins. The Club's President was a passenger, and carried a letter of congratulation from Sir Sefton Brancker.

THE SAVOIA S.52 AND S.58 BATTLE 'PLANES

In our issue for April 9 last we published an illustrated description of some of the aircraft constructed by the Società Idrovolanti Alta Italia (S.I.A.I.), of Sesto Calende, including the S.16 ter. flying boat on which Col. di Pinedo recently accomplished a successful flight from Rome to Australia. We also referred to certain other types constructed by this firm, and, in view of the fact that the splendid flight referred

largely of metal construction. Unfortunately, however, we have been unable to obtain any constructional details of this machine.

As previously indicated, the wings, both upper and lower, are more or less of "taube" (dove) plan-form and are swept back—6 deg. in the top plane and 5 deg. in the bottom. The bottom plane is slightly smaller in span and chord than



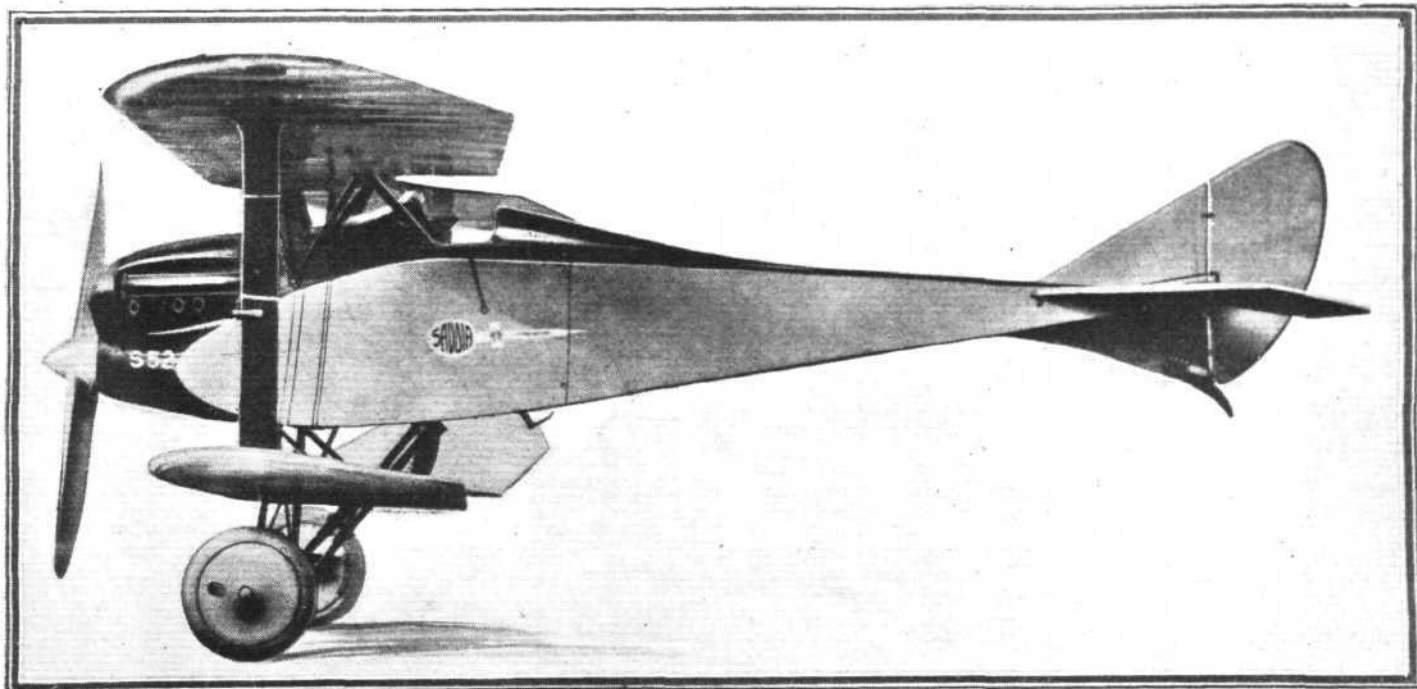
THE SAVOIA S.52: Three-quarter front view of a land type fighter constructed by the Italian S.I.A.I. It has a 300 h.p. Hispano-Suiza.

to above has brought into prominence the name of S.I.A.I., we think it may be of interest if we give this week some brief particulars, with illustrations, of two of these other "Savoia" machines—both of the fighter class.

The two machines in question are the S.52 and the S.58. With the exception of the S.52 type, all the aircraft constructed by the S.I.A.I. have been of the flying-boat type, so that more than usual interest centres on the S.52, inasmuch as it is a

the top plane, and is given a dihedral angle of 5 deg. An interesting feature of the wing design lies in the fact that the left-hand wings are some 3 ins. more in span than the right-hand ones, the object of which is to counteract the torque effect of the airscrew.

The top plane, which is without dihedral angle, is in two sections, joined at the centre to a pyramid cabane extending from the fuselage and further supported by a set of N-struts,

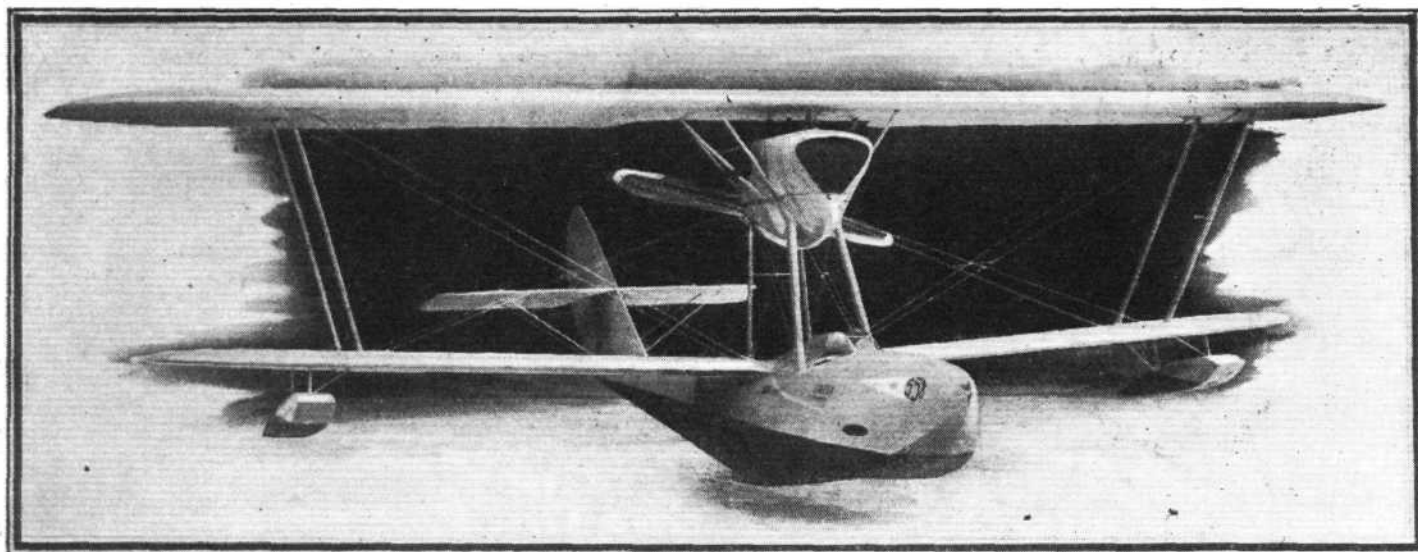


THE SAVOIA S.52: Side view of the Savoia land 'plane, showing the "clean" lines of its design.

land machine of the tractor fuselage type. Besides this point, however, the S.52, as may be seen from the accompanying illustrations, possesses several distinctive features in design and has decidedly pleasing lines.

In general appearance it is somewhat reminiscent of the 1914 D.F.W. biplane, with its "taube" back-swept wings, although in the case of the S.52 this feature is not very pronounced. The most important feature of the S.52 is that it is

one from each top side of the fuselage. The lower plane is in three sections, consisting of a short centre panel, mounted well below the fuselage, to which are attached the outer extensions. Top and bottom planes are separated by a single I-strut each side of the fuselage, sloping outwards from the lower plane, and the bracing is single streamline cables running from the strut extremities to points slightly forward of the latter—to the top of each forward N-strut in the case



THE SAVOIA S.58: Three-quarter front view of the single-seater fighter flying boat, fitted with 300 h.p. Hispano-Suiza.

of the landing cables and to a point on the leading edge of the centre section, when the outer extensions are attached, in the case of the lift cables.

Ailerons are fitted to the top plane only, and these are unbalanced, but are hinged so that they form an angle of some 15 deg. to the lateral axis of the machine—in other words, when seen in plan their axes are inclined rearwards towards the centre of the fuselage. The operating cables from the joy-stick are taken up the I-struts, thence via short rods on the top of the plane to the aileron cranks.

The tail surfaces consist of two non-lifting triangular horizontal stabilising surfaces, one mounted on each side of the fuselage, located slightly above the line of thrust, to the trailing edges of which are hinged unbalanced elevators. Above and below the fuselage is a small triangular fin, to which is hinged the rudder. The lower fin carries the tail skid.

The fuselage is of good streamline shape, comparatively deep in the vicinity of the pilot's cockpit, and tapering sharply to a horizontal knife-edge at the tail. The fuselage is, we believe, built up in two sections, being divided immediately behind the cockpit. The 300 h.p. Hispano-Suiza engine is housed within a neat streamline cowling with nose radiator. The pilot's cockpit is situated just beneath the trailing edge of the top plane, the central portion of which, as well as that of the lower plane, being cut away in order to increase the pilot's range of vision—which is extremely good in this machine. Two machine guns, firing through the air-screw, are provided.

The landing chassis is of the V-type, with additional

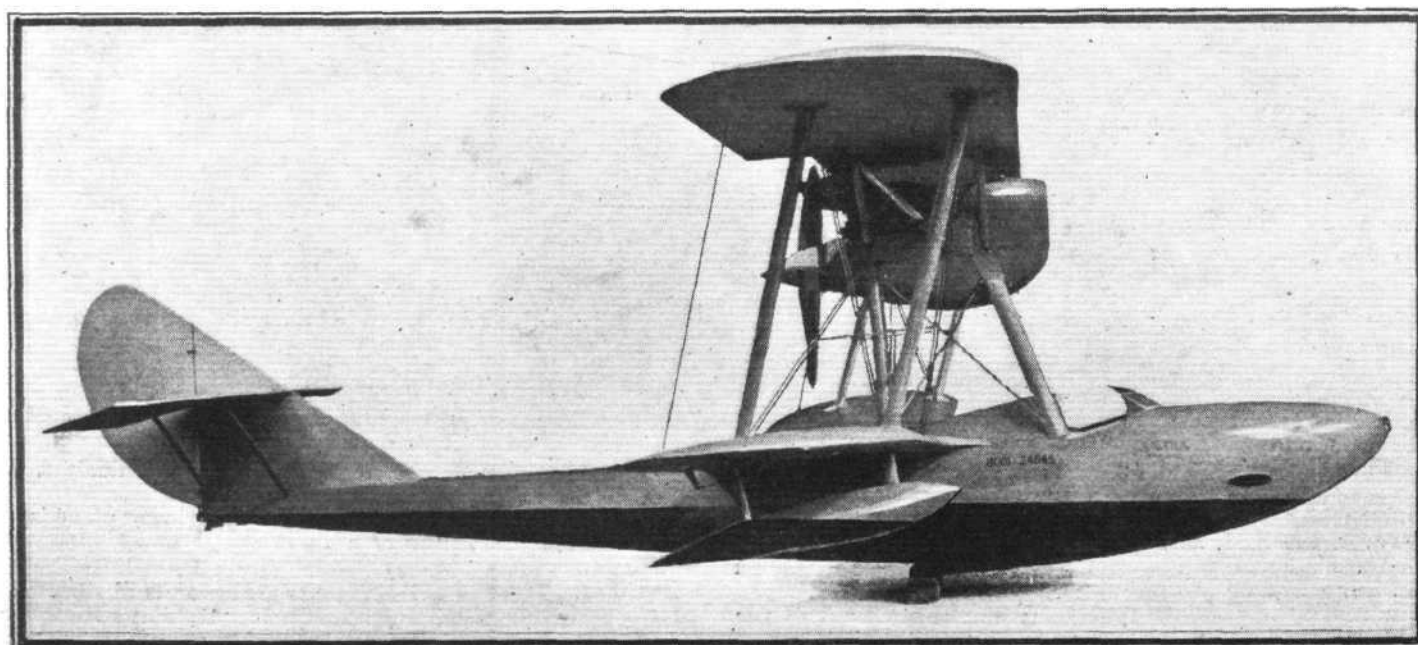
strutting at the lower plane centre section and W-bracing between the V's.

The principal characteristics of the S.52 are:—

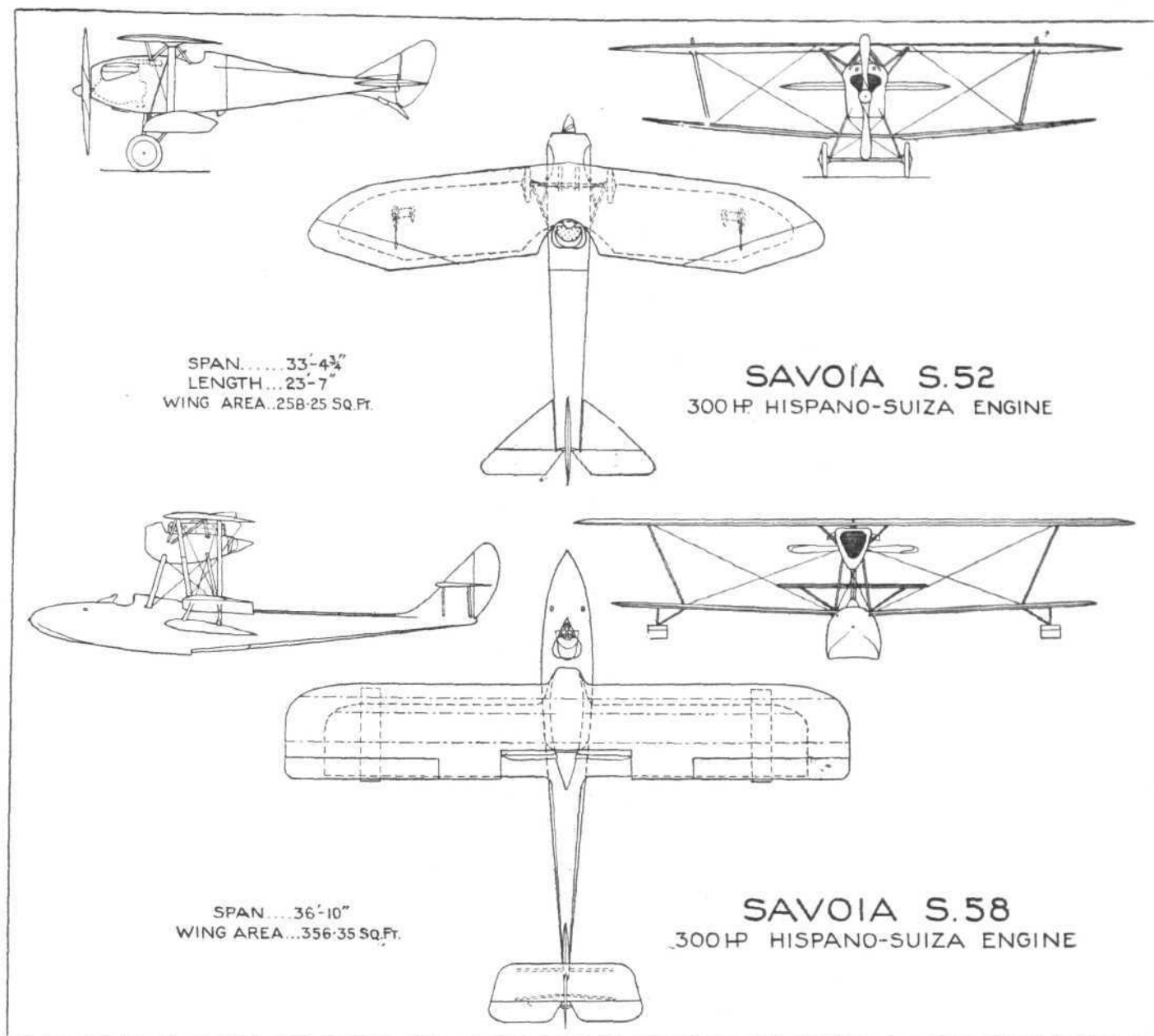
Span	33 ft. 4½ ins. (top), 22 ft. 4 ins. (bottom).
Chord	5 ft. 6 ins. (top), 4 ft. 3 ins. (bottom).
Gap	6 ft.
O.A. length	23 ft. 7 ins.
Height	8 ft. 6 ins.
Wing area	258.24 sq. ft.
Weight empty	1,764 lbs.
" fully laden	2,425.5 lbs.
" per sq. ft.	9.3 lbs.
" per H.P.	7.7 lbs.
Speed range	59–173.6 m.p.h.
Climb to 3,280 ft.	1 min. 30 secs.
" 16,400 ft.	15 mins. 30 secs.
Range	2½–3½ hrs.

We now come to the second Savoia machine, the S.58; this is a single-seater flying boat fitted with a 300 h.p. Hispano-Suiza engine. It follows typical Savoia practice, and in many respects it is similar to the S.57 (a two-seater fast reconnaissance) which we described in our previous article (FLIGHT, April 9, 1925), so that we need not do more than refer to its principal features.

Apart from the fact that it is a single-seater, the S.58 differs from the S.57 mainly in an improved "cleanness" in



THE SAVOIA S.58: Side view of the single-seater fighter flying boat.



THE SAVOIA S.52 AND S.58 BATTLE 'PLANES: General arrangement drawings.

design. Also, the lower plane of the "58" is smaller, both in chord and span, than that of the "57," although the dimensions of the top plane are much the same in both types. This results in adding to the stagger effect in the "58," for the trailing edges of the top and bottom planes being practically in line, the leading edge of the top plane is well forward. The wings are of the two-bay-with-dihedral-on-lower-plane type, and the 300 h.p. Hispano engine is enclosed in a neat streamline radiator-in-nose nacelle mounted high up close to the top plane. The hull is of the single-step, concave-bottom Savoia type.

The first model of this type, as soon as it was completed, established a world's altitude record (5,831 m.=19,125-6 ft.) for seaplanes with 250 kgs. load, on August 25, 1924, piloted by pilot Bacula.

The principal characteristics of the S.58 are:—

Span	36 ft. 10 ins. (top), 32 ft. 7 ins. (bottom).
Chord	5 ft. 11 ins. (top), 5 ft. 5 ins. (bottom).
Gap	5 ft. 10 ins.
O.A. length	30 ft.
Height	8 ft. 9 ins.
Wing area	356-35 sq. ft.
Weight, empty	2,205 lbs.
" fully laden	2,932-6 lbs.
" per sq. ft.	8-1 lbs.
" per H.P.	9-7 lbs.
Speed range	50-155 m.p.h.
Climb to 3,280 ft.	1 min. 45 secs.
" to 16,400 ft.	20 mins. 15 secs.
Range	2 1/2-3 1/2 hrs.

Borneo Being Surveyed from the Air

THE Air Survey Co., Ltd., has a busy time before it in connection with aerial survey work in the East and elsewhere. Two seaplanes and three pilots, including Mr. R. C. Kemp and Mr. F. P. Raynham, and also several European and Borneo assistants, are at present employed by the Royal Dutch oil interests in carrying out an aerial survey of 1,400 square miles of country in Sarawak, North Borneo.

Aviation in the Far East

We learn from the *Pinang Gazette* that on May 23 the Royal Air Force Association of Shanghai opened new headquarters in the Hongkong Bank Building, Capt. V. J. B.

Holland, presiding over the ceremonies. The Association is to protect and promote British flying interests in the East and will also serve to unite R.A.F. men. Efforts are being made to obtain two machines from England.

"A Flying Visit to the Middle East"

THE travel notes made by the Secretary of State for Air (Sir Samuel Hoare) during his recent visit by aeroplane to Iraq and Palestine, when he was accompanied by Mr. Amery, the Colonial Secretary, will be published by the Cambridge University Press this month. The book, based upon the lectures that he has recently given, will be entitled "A Flying Visit to the Middle East."

KING'S CUP AND CROYDON STAKES PRIZES

THE following are the official awards by the Royal Aero Club of the prizes in the King's Cup Race:—

1st Prize £100, presented by SIR CHARLES C. WAKEFIELD, Bart., to the Winner of the King's Cup.

Winner: THE RT. HON. SIR ERIC GEDDES, G.C.B., G.B.E.
(Siskin V. Armstrong-Siddeley "Jaguar" 395 h.p.
Pilot: Capt F. L. Barnard.)

2nd Prize £100, presented by MR. SAMUEL SAMUEL, M.P., to the entrant of the aircraft placed second.

Winner: SIR GLYNN HAMILTON WEST.
(Siskin IV. Armstrong-Siddeley "Jaguar" 395 h.p.
Pilot: Flight-Lieut. H. W. G. Jones, M.C.)

3rd Prize £50, presented by SIR CHARLES GREENWAY, Bart., to the entrant of the aircraft placed third.

Winner: MR. A. S. BUTLER.
(D.H.37 Rolls-Royce "Falcon," 275 h.p.
Pilot: Major H. Hemming, A.F.C.)

Prize £100, presented by THE RESIDENTS OF HARROGATE, to the entrant of the aircraft which completes the whole course in the fastest time.

Winner: THE RIGHT HON. SIR ERIC GEDDES, G.C.B., G.B.E.
(Siskin V. Armstrong-Siddeley "Jaguar" 395 h.p.
Pilot: Capt. F. L. Barnard.)

Prize £50, presented by THE RESIDENTS OF HARROGATE, to the entrant of the aircraft which makes the fastest handicap time to Harrogate on the first day.

Winner: THE RIGHT HON. SIR ERIC GEDDES, G.C.B., G.B.E.
(Siskin V. Armstrong-Siddeley "Jaguar" 395 h.p.
Pilot: Capt. F. L. Barnard.)

Prize £50, presented by THE RESIDENTS OF HARROGATE to the entrant of the aircraft which makes the fastest handicap time from the commencement of the Race to Harrogate on the second day.

Winner: THE RIGHT HON. SIR ERIC GEDDES, G.C.B., G.B.E.
(Siskin V. Armstrong-Siddeley "Jaguar" 395 h.p.
Pilot: Capt. F. L. Barnard.)

Prize £50, presented by THE DIRECTORS OF THE BRISTOL AEROPLANE Co., to the entrant of the aircraft which makes the fastest handicap time to Bristol on the first day.

Winner: THE RIGHT HON. SIR ERIC GEDDES, G.C.B., G.B.E.
(Siskin V. Armstrong-Siddeley "Jaguar" 395 h.p.
(Pilot: Capt. F. L. Barnard.)

CUP presented by THE NEWCASTLE CHRONICLE, LTD., to the entrant of the aircraft which makes the fastest handicap time from the commencement of the Race to Newcastle-on-Tyne on the second day.

Winner: THE RIGHT HON. SIR ERIC GEDDES, G.C.B., G.B.E.
(Siskin V. Armstrong-Siddeley "Jaguar" 395 h.p.
Pilot: Capt. F. L. Barnard.)

The following are the official awards by the Royal Aero Club for the "Croydon Stakes."

1st Prize £150, presented by THE ROYAL AERO CLUB (The Racing Fund.)

Winner: AIR COMMODORE J. G. WEIR, C.M.G.
(D.H.51 Airdisco, 120 h.p.
Pilot: Col. The Master of Sempill.)

2nd Prize £50, presented by THE ROYAL AERO CLUB (The Racing Fund.)

Winner: SIR CHARLES C. WAKEFIELD, Bart.
(D.H.60 "Moth" Cirrus, 27-60 h.p.
Pilot: Alan J. Cobham.)

Busk Studentship in Aeronautics

THE Trustees of the Busk Studentship in Aeronautics, founded in memory of Edward Teshmaker Busk, who lost his life in 1914, whilst flying an experimental aeroplane, have awarded the Studentship for the year 1925-6 to Mr. Stewart Scott Hall of the Imperial College of Science, London.

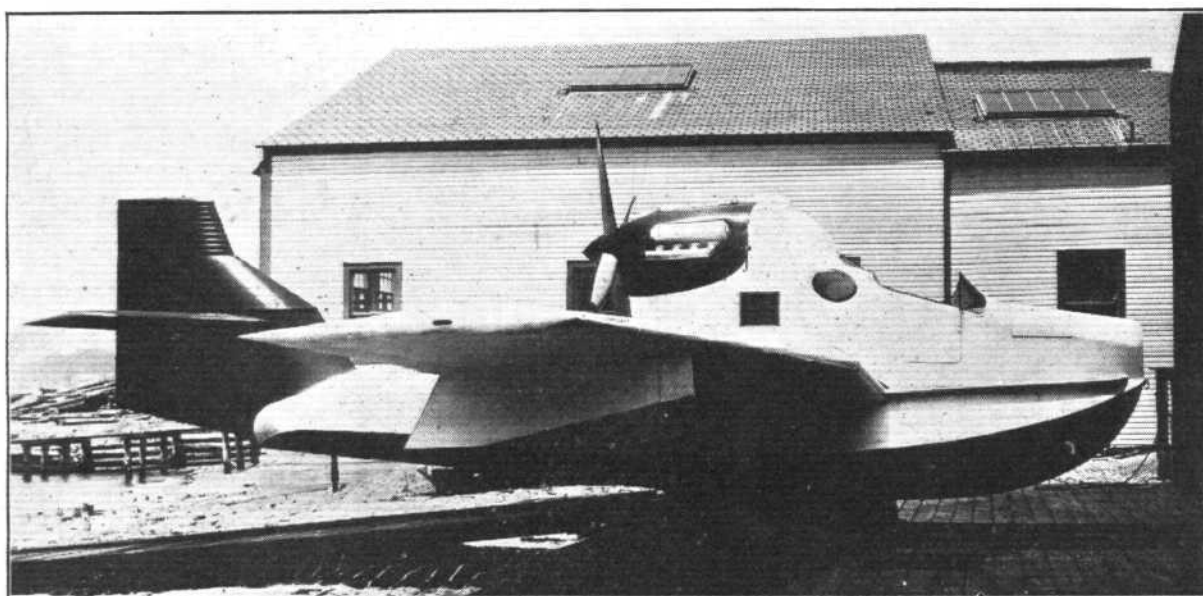
Air Mail Summer Services

PARTICULARS of the new summer services are contained in the Air Mail leaflet, now obtainable at Post Offices. The special air fee on letters for the United States has been slightly reduced. The average time taken, according to recent tests, from London to San Francisco, by letters

travelling by Air Mail across the United States, is nine days.

The Mannock Memorial

ON Saturday last a memorial tablet was unveiled in Canterbury Cathedral, by Group Capt. Herbert, to Major Edward Mannock, V.C., D.S.O., M.C., who met his death during an aerial encounter over the German trenches on July 18, 1917. He was a member of the famous 74th Squadron of which he was eventually the leader, and his "score" of enemy aircraft was 75. During the war he was known as the "Mysterious Captain X" whose daring exploits became world famous.



MR. HAROLD VANDERBILT'S NEW AIR YACHT: The new monoplane flying boat, fitted with a 450 h.p. Napier "Lion," that has just been completed at Long Island, N.Y., to the order of Mr. Harold Vanderbilt, and to which reference has previously been made in "Flight." It is a five-seater of metal construction—corrugated duralumin being largely employed—and has been designed and built by the Kirkham Products Corporation, Garden City, N.Y. Span, 47 ft; speed range, 60-145 m.p.h.; weight empty, 3,700 lb.; range of action, 4½ hours

LIGHT 'PLANE AND GLIDER NOTES

TO-MORROW, Friday, is the closing date for entries for the Royal Aero Club August Race Meeting, which is to take place at Lympe on August 1, 2 and 3. Although, naturally, nothing very definite can be said as regards the number of entries until the list is closed, it begins to look as if the Lympe meeting will be quite an interesting one. Although the meeting is not confined entirely to light 'planes, there being an international handicap open to all aeroplanes irrespective of engine size, the majority of the races will, of course, be for machines of fairly low power, even if some might not regard machines with an engine weight of 275 lbs. as being light 'planes in the strict sense of the word. There is a chance that several foreign flying machines will be taking part in the meeting, which fact should, of course, add very materially to the interest, since it has now come to be something of a novelty to see a foreign aeroplane competing in a British aviation event.

BRIEF details of the various races were published in the Official Notices of the Royal Aero Club in last week's issue of FLIGHT, and there is thus little need to go into detail concerning them here. The prizes are not startling when compared with such competitions as the German Rundflug, but in view of the great number of events and the fact that a number of machines built for last year's Lympe competition are still in existence, the prizes that can be won at Lympe are by no means to be despised and some very interesting racing should be witnessed. The course over which the races are to be flown is the same as that used in last year's competitions, so that, provided the weather is reasonably clear, the machines should be in sight practically throughout. This course, it may be remembered, is a triangular one measuring, approximately, 12½ miles.

Nor the least interesting event should be that known as "Certified Performances for Light 'Planes," in which certificates of performance will be granted by the Royal Aero Club, the performances being divided into four classes: Class I being for height attained in 30 minutes, Class II for greatest speed over three kilometres, Class III for greatest speed over 50 kilometres, and Class IV for greatest altitude attained, no time limit being imposed. These certified performances are open to light 'planes of both single and two-seater type, the only stipulation being that the engine weight must not exceed 170 lbs.

ANOTHER very interesting event, and one which will, we think, become very popular in years to come, is to be an inter-club race open to D.H. "Moths." As all the machines in this race will be of one type and all with the same type of engine, the race is naturally a scratch race, and the aim of competitors will, of course, be to tune up their engines to maximum pitch, while cornering and course keeping by the pilot will also play an important part. For pure sport there is little doubt that such a race is vastly more entertaining than any handicap in which a variety of types and powers take part.

In connection with the August meeting, it is of interest to note that the Cranwell Light 'Plane Club is completing a new machine, which it is hoped to have finished in time to take part in the Lympe races. This machine is a parasol monoplane with Bristol "Cherub" engine and we understand that if the machine comes up to expectations a top speed of somewhere in the neighbourhood of 100 m.p.h. should be attained. Those who remember the little biplane entered by Cranwell at last year's competitions will, we feel sure, join us in wishing the Cranwell Club every success with their new monoplane, about which we hope to have something more to say next week.

"THE ELEVATOR" is the title of the official bulletin of the Lancashire Aero Club, which is to appear monthly, and of which we have recently received the first number. The object of "The Elevator," which, by the way, is edited by Rex Williams, is to keep members of the Club in close touch and to let them know exactly what is going on. In addition to matters of more serious interest there is a page headed "Things it would Pain Us to Know," in which the very pertinent question is being asked: How long (or short!) it will take to crash a "Moth," and who will be the culprit (or victim). "The Elevator" also wants to know how many copies of "Advice to young Moth-ers" have been sold since the Lancashire

"Moths" were ordered, a horrible pun which will, we are afraid, cause the flying members of the present Light 'Plane Clubs to be known as "Moth-ers." It is to be hoped that non-flying members will not be styled "Grubs."

THE eliminating tests for machines taking part in the Vauville Light 'Plane and Glider meeting commence tomorrow, Friday, July 24, and take the form of fuel consumption tests. In addition to the 100,000 francs already offered in prizes, a prize of 1,000 francs is now offered by M. Gigaut for consumption tests and 10,000 francs by the "Petit Parisien" for the greatest distance covered in one hour's flight. The actual competitions commence on Sunday next, July 26. As recorded in these notes last week, no less than 34 machines have been entered, half of which are light 'planes and the other half gliders. Several countries will be represented, but, unfortunately, the Lympe meeting has prevented the entry of any British light 'planes.

In addition to his 1,000-franc prize, M. Gigaut has placed at the disposal of the French Aerial Association two Anzani engines of 25 h.p. Both are quite new, *i.e.*, have never been used, and are of the "Tour de France" type, of two litres capacity. These engines will be lent by the French Aerial Association to serious experimenters, who are without the means necessary to carry out actual flying tests, and will be lent to each such experimenter for a period which is judged sufficient to enable thorough tests to be carried out. This example might with advantage be followed in this country, where, although amateur construction is not over-plentiful, there must nevertheless be several who would and could construct light 'planes if they could be assured of being able to borrow an engine to put into them.

THE Dutch Marine has, we understand, ordered a batch of the Pander light monoplanes with 25 h.p. Anzani engines, the first of which were delivered on July 15. After successfully passing their acceptance tests, with full load and fuel for six hours' flying, the machines flew to their future base at Den Helder.

MR. EDMUND T. ALLEN, who, it will be remembered, took part in one of the early Rhön glider meetings, and who has since become Contributing Editor to "Aviation," has joined the American Air Mail service and will be flying on the Cheyenne-Salt Lake City section. He is still, however, retaining his position as Editor in charge of the Light 'Plane department of "Aviation," and still hopes to keep in close touch with the light 'plane movement, both in the United States and in Europe. Incidentally, Mr. Allen informs us that there will be two light 'plane events in the races to be held at Long Island on October 1, prizes to the value of 4,000 dollars being offered. The limitation is one of engine size, the maximum capacity being 80 cub. in. The events are, we understand, to be international ones.

No less than 26 aeroplanes were admitted to the competition for the Lilienthal prize, which is now nearing its conclusion at Adlershof, near Berlin. In addition to these, six more machines are going through the tests *hors de concours*. Machines had to qualify for this competition by their performances in the Rundflug, and one stipulation was that machines of Class A must obtain at least 40 per cent. in the Rundflug; those of Class B at least 55 per cent.; and those of Class C at least 70 per cent. The competition is flown to various formulæ, which are rather more complicated than those of the Rundflug even.

A NEW book on light 'planes has just been published by R. Oldenbourg (Munich and Berlin), the author being Dr. Ing. G. Lachmann, and the title being "Leichtflugzeugbau" (Light 'Plane Construction). Dr. Lachmann, it will be remembered, produced the slotted wing in Germany at approximately the same time as did Mr. Handley Page in England, and has since then co-operated with the Handley Page firm in the matter of developing slotted wings. The book in question contains 107 illustrations, a large proportion being reproductions of scale drawings of British light 'planes from FLIGHT. The theoretical side of light 'plane design is gone into very fully, and Dr. Lachmann's book is well worthy of close study, even by those who are fairly familiar with the subject.

LIGHT 'PLANE CLUB DOINGS

The Midland Aero Club.—The suggested scheme of working and terms of membership of the light aeroplane section of the Midland Aero Club were outlined at a meeting of the organisation in Birmingham on Monday, July 13.

Major Vernon Brook presided, and said the club had been approved by the Air Ministry in connection with the Ministry's light aeroplane scheme, and would receive a subsidy of £3,000, £2,000 of which would be in the form of equipment. Two De Havilland Moth light aeroplanes had been ordered and delivery was expected at the end of this month. It was hoped that actual flying would be in progress some time during August. Arrangements had been made to use the aerodrome at Castle Bromwich, and within a few days a pilot instructor would be appointed.

Major Gilbert Dennison, the Hon. Secretary, said for the first 500 new members it was proposed that the annual subscription should be £1 1s. in the case of ordinary members and between £3 3s. and £4 4s. in the case of flying members. After the first 500 members the terms would be the same except that an entrance fee of £1 1s. would be charged in addition.

It was estimated that the flying charges both during the tuition period and subsequently when members would use the machines for practice flying would be between 25s. and 30s. per hour. Altogether it was calculated that the cost of each flying member of taking his certificate would be well under £25. Twelve hours was the average time during

which it was considered a flying member should become proficient, but no flying member would be allowed to make his first solo flight until he had had ten hours' dual control instruction.

The club was aiming at a membership of a thousand, which would include ladies, and was open to anybody interested in flying from any point of view, whether as a sport or as Service flying. Membership, in view of the fact that at the moment there were only two machines available for tuition, would probably have to be restricted. In connection with the flying activities it was hoped to develop greatly the social side, so as to make the aerodrome attractive to those members of the club who did not necessarily desire to fly.

In conjunction with the actual flying tuition there would be a series of lectures on the theoretical side, and examiners from the Air Ministry would come down once a month to test flying members desirous of taking their flying certificates. Ladies would be eligible to become flying members, and on the vexed question of the medical examination of intending flying members the club had decided to accept, provisionally, the certificate of fitness of the member's own medical man. The club would welcome members who, after taking their flying certificates, acquired their aeroplane, and ran it from Castle Bromwich. As soon as the two Moth machines were delivered, a public meeting would be held, at which the club's scheme would be formulated in definite form.

BOY CLERKS IN THE ROYAL AIR FORCE

New Scheme Outlined

As a result of the experience gained from the working of the scheme for the enlistment of boys in the Royal Air Force as aircraft apprentices, the Air Ministry has drawn up a scheme on broadly similar lines for the entry of well-educated boys into the ranks of the Royal Air Force to be trained for clerical duties. The scheme should prove attractive to boys with an aptitude for clerical work and a liking for service life, who desire to see the world. The experience and training obtained during service should be of great assistance to them on returning to civil life. The clerical work in the Royal Air Force, particularly that connected with pay and stores accounting, calls for intelligence and accuracy and a capacity for readily assimilating instruction, and a good standard of education is therefore required from candidates. They must be physically fit, between the ages of 15½ and 17, and must be of pure European descent and the sons of natural-born or naturalised British subjects. A pamphlet (Air Publication 1109) containing the detailed regulations can be obtained on application from the Secretary, Air Ministry, Adastral House, Kingsway.

Entry under this scheme will be by one of two systems—(i) open competition and (ii) direct enlistment. These two methods will operate in alternate quarters of the year.

Open Competition.—The first open competition will be held by the Civil Service Commissioners at various centres commencing on October 16 next, when 30 vacancies will be offered for competition. Successful candidates at this examination will enter the R.A.F. in January, 1926. Requests for forms of application to sit for the examination should be sent to the Secretary, Civil Service Commission, Burlington Gardens, W.1, and not to the Air Ministry. No form of application received after September 3 next can be accepted. No candidate may compete simultaneously at this examination, and at the concurrent examination for the entry of aircraft apprentices in the Royal Air Force.

Direct Enlistment.—The first entry by direct enlistment will take place in October next, when 15 candidates will be selected for entry forthwith. This method of entry is

open only to those who have obtained a School Certificate by passing one of the examinations of the approved university or other examining bodies, or, as regards boys educated in Scotland or Northern Ireland, have attained an equivalent standard of education. Forms of application may be obtained from the Secretary, Air Ministry, Adastral House, Kingsway, W.C. 2, and should be completed and returned to the Air Ministry not later than September 3. A Selection Committee will interview suitable candidates at the Royal Air Force Station, Ruislip, Middlesex. Railway warrants will be provided. If necessary, a brief educational test may be given. Selected candidates who are found medically fit will be attested forthwith for 12 years from the age of 18, with the possibility of re-engaging to complete 24 years with a view to pension. Unsuccessful candidates will be given free railway warrants to their homes.

Entrants under the Boy Clerks scheme will be provided with a free outfit, and will be lodged and rationed free of cost in addition to receiving pay. They will be trained for two years, during which period they will receive instruction in shorthand, typewriting and book-keeping, etc., in addition to practical office work, and will continue their general education. A boy who passes out well will, provided he is 18 years of age, be eligible for advancement to the rank of leading aircraftman (Group IV). The present rate of pay of a leading aircraftman is 4s. 6d. a day rising to 5s. 2d. a day, and there are good prospects of subsequent advancement. A certain number of boys of special promise will be selected for a further course, and, if successful, will be advanced to the rank of Corporal (Group IV), the present rate of pay of which is 5s. 10d. a day, rising to 6s. 6d. a day. Those boys who pass out successfully but fail to reach the standard required for leading aircraftman or corporal will be classified as aircraftman 1st class or aircraftman 2nd class, according to the marks they obtain, with pay of 4s. a day (rising to 4s. 4d.) and 3s. 6d. a day, respectively.

There will, of course, be opportunities for further advancement at a later stage.

Norwegian Air Fatality

ON July 16 two Norwegian aviators, Lieuts. Amundsen and Knudtzon, crashed from a height of 300 ft. during flying exercises near Christiansand, and both were killed.

Air Fighting in Morocco

FRENCH aircraft are carrying out extensive and successful operations in the Morocco campaign. Just recently French machines on the Ouezzan front bombed the Kabyle and Beni Mesguida, who suffered heavily. The situation at

present has somewhat improved, especially in the east, thanks to artillery and air action, the Riffs having received great losses.

Aerial Targets at Gosport

THE Air Ministry announces that an aeroplane towing a target will be employed in connection with firing practice at the Gosport aerodrome until further notice. All pilots should keep clear of this machine and its target.

AIR MINISTRY NOTICES

Aerial Navigators' Licences—Conditions of Examination

1. ARRANGEMENTS have been made for the examination of candidates and issue of licences to act as aerial navigators.

2. There will be two classes of navigators and two examinations—first and second class. Candidates must pass the second-class examination before taking the first-class examination.

3. The syllabi and conditions of examination may be obtained on application to the Secretary, Air Ministry (A. and L.), Kingsway, London, W.C. 2.

4. An examination for second-class navigators will be held about the end of September. A further Notice will be issued giving details of place and time of examination. The examination is expected to last two or three days.

5. Applications to sit at this examination should be sent to the Secretary, Air Ministry (A. and L.) not later than August 15. Candidates should give, with their applications, full details of any qualifications they already possess.

6. The conditions of examination now announced take the place of those detailed in C.A. Publication 2, the withdrawal of which was notified in Notice to Airmen No. 31 of 1925. The requirements as to medical examination specified in the Air Navigation Directions are not affected by this Notice.

7. For the time being, the holder of a licence of either class will be qualified to navigate aircraft in accordance with Article 5 (2) of the Air Navigation (Consolidation) Order, 1923. At a later date it is intended to introduce more stringent conditions, which will require the carriage of a first-class navigator on certain flights.

8. PREVIOUS NOTICES.—Notice to Airmen No. 31 of 1925 is hereby cancelled.
(No. 36 of 1925.)

Holland : Flushing Meteorological Ground Signals

1. THE meteorological ground signals at Vlissingen (Flushing) will, until further notice, be displayed for:—

Schiphol	At 0745 and 0845 hours.
Rotterdam	„ 0945, 1045, and 1345 hours.
Ostend	„ 0819, 0919, 1519, and 1619 hours.

The ground signals for Rotterdam which are displayed after reception of the 1345 weather report will remain unchanged until 1819 unless weather conditions at Rotterdam undergo a change necessitating an alteration in the ground signals displayed, in which case the Rotterdam-Waalhaven W/T Station will immediately inform the patrol ship *Buffel* at Vlissingen, whose personnel is responsible for displaying the ground signals.

Note.—The times given above are G.M.T. Add 1 hour

to convert them into B.S.T., and 1 hour 20 minutes to convert them into A.S.T. (Amsterdam Summer Time).

2. INFORMATION AFFECTED.

The Air Pilot Appendix, page 43, paragraph 73, is affected. Notice to Airmen No. 116 of 1924, and Section 4, paragraph (1), page 10, of the Air Pilot Monthly Supplement No. 7 are cancelled.

3. AUTHORITY.

Netherlands Notice to Airmen No. 21 of 1925.
(No. 38 of 1925.)

Cross-Channel Flights of Aircraft not Equipped with W/T Apparatus

It is notified that in future the following arrangements will be available for pilots of aircraft *not equipped with W/T apparatus*, who wish to have their passage across the channel reported by W/T:—

(1) It is of the utmost importance that any pilot who decides to avail himself of these arrangements shall, after signalling his departure at one of the places named below, also signal his arrival on the other side of the Channel.

(2) The reporting points are as follows:—

Lympne aerodrome.

Ostend aerodrome.

St. Inglevert aerodrome.

Calais semaphore station at Village des Baraques.

(3) An aircraft leaving England must circle *once* over Lympne aerodrome at a height of not more than 1,000 ft. The departure of an aircraft making this signal will be reported immediately to Ostend and St. Inglevert.

(4) An aircraft on arriving over Ostend or St. Inglevert aerodrome, or the Calais semaphore station, must circle once at a height of not more than 1,000 ft. The arrival of an aircraft making this signal will be reported immediately to the Air Ministry, London.

(5) In a similar way an aircraft departing for England must circle once over the aerodrome at Ostend or St. Inglevert, or over the Calais semaphore station, and signal its arrival in the same way at Lympne. The departure of an aircraft making this signal will be reported immediately to Lympne and its arrival at Lympne reported to the Air Ministry.

(6) An aircraft, signalling in the manner indicated its departure from either side of the Channel, which is not reported as having arrived on the other side within one hour after departure will be treated by the Air Ministry as missing and steps taken to warn all shipping and to put in train such other action as may be possible to carry out a search and to effect a rescue.

Air Pilot.—An amendment to the air pilot will be notified in due course.

(No. 40 of 1925.)

AERONAUTICAL RESEARCH COMMITTEE REPORTS

FROM the number of enquiries we receive it appears that there is a desire in aircraft circles to know approximately the contents of the various technical publications of the Aeronautical Research Committee. All the aircraft firms probably receive these reports regularly, whether or not they contain anything of immediate interest or utility. In the case of draughtsmen, however, and others interested in aeronautics, who can hardly be expected to purchase all the reports, the problem of deciding whether any publication interests him is often a difficult one. As it is obviously desirable that the knowledge of aeronautics should be made available to all who take an interest in the subject, we have arranged with the Air Ministry to publish in **FLIGHT** summaries of all the technical publications as soon as these are issued, or shortly before they are published. All A.R.C. publications can be purchased from H.M. Stationery Offices at Adastral House, Kingsway, London, W.C.2; 28, Abingdon Street, London, S.W.1; York Street, Manchester; 1, St. Andrew's Crescent, Cardiff; 120, George Street, Edinburgh, and through any bookseller.

Discontinuous Flow Around the Edge of a Bluff Obstacle. By L. W. Bryant, B.Sc., A.R.C.Sc., and D. H. Williams, B.Sc. Reports and Memoranda, No. 962. (Ae. 178.) (4 pages and 13 diagrams.) January, 1925.

A question of general interest which often arises in practice is the correct shaping of the nose of a body in order that the eddying region immediately behind the nose may be as small as possible. The experiments herein described have a bearing on this question, and the results should prove useful as a starting point in determining the best shape of the leading parts of three-dimensional bodies for specific purposes, particularly when a certain degree of bluntness is unavoidable.

A rectangular block of 6 ins. by 8 ins. section was fixed vertically from roof to floor in a 4-ft. wind tunnel, with an 8-in. face at right angles to the wind. The shape of the boundary line of the region of "cliff eddies" was determined by

photographing a narrow smoke jet of ammonium chloride. Subsequently the two front edges were chamfered or rounded off in various ways and the extent of the eddying regions similarly determined in each case.

It appears that the eddying behind the nose can be considerably reduced by very moderate fairing of the sharp edges; and it is shown that the best shape of fairing depends upon the amount of material which it is permissible to remove from the edges.

A comparison made with the lines of discontinuity as calculated in accordance with the theory of two-dimensional discontinuous motion of a perfect fluid, shows excellent agreement for the first inch or two of flow from the edge of the block.

It is considered that the results herein described may prove useful as a starting point in determining the best shape of the leading parts of three-dimensional bodies when a certain degree of bluntness is unavoidable.



Married

The marriage took place on Saturday, at St. Simon Zelotes, Lennox Gardens, of Flight-Lieut. R. A. BIRKBECK, R.A.F., son of the late Major V. M. Birkbeck, Royal Scots, and Mrs. Birkbeck, of Stackhouse, Bournemouth, and Miss MARY NEVILLE, only daughter of Mr. and Mrs. REGINALD MOXON, of Albert Hall Mansions, Kensington Gore.

FLYING OFFICER WILLIAM GRAHAM NICHOLLS, R.A.F., son of Mr. Thomas Nicholls, of Broadwindsor, Dorset, was married on July 18, at St. Mary's, The Boltons, Kensington, to MARY ELLEN, daughter of Mr. GEORGE F. FAIRHOLME, C.M.G.

GWILYM HUGH LEWIS, D.F.C., son of Mr. and Mrs. Hugh Lewis, St. David's, Noctorum, Birkenhead, was married on July 9, at St. George's, Hanover Square, to CHRISTIAN, second daughter of Mr. and Mrs. H. W. ROBERTSON, Fintry, Brook, Surrey.

JAMES ALFRED SNAREY WRIGHT, A.F.C., of 34, Neeld Crescent, Wembley Hill, and 37, Cavendish Square, W. 1, younger son of the late James Walter Wright and Mrs. Wright, was married on July 16, at Folkestone, to KATHLEEN HENRIETTE GERTRUDE LOWY, second daughter of Mr. and Mrs. Robert Leopold Lowy, of 101, Barrowgate Road, Chiswick, W. 4.

To be Married

The marriage of Mr. ROBERT DARLEY WHELAN, R.A.F. and Miss BARBARA MARION CELIA WREY, younger daughter of Sir BOURCHIER and Lady WREY, is to take place on August 12 at All Saints' Church, Brenchley, Kent.

Item

General Zagorski, Chief of the Polish Air Staff, left London on July 9.

Navy, Army and Air Force Institutes

ADMIRAL SIR MORGAN SINGER, K.C.B., K.C.V.O., retired, has been appointed as one of the Admiralty representatives on the Council of the Navy, Army and Air Force Institutes, in place of Admiral Sir William de Salis, K.B.E., M.V.O., retired, who has resigned.

Airmen's Pensions

THE Air Ministry have issued three Orders in Council (Stationery Office 133-1, 133 and 134, 1d. and 2d. each) dealing with amendment of Orders of May 11, 1920, for the pensions of airmen disabled and of the families and dependents of airmen deceased in consequence of the Great War.

R.A.F. Flying Accidents

THE Air Ministry regrets to announce that, as a result of an accident on the Qara Dag, above the village of Malula,

east of Kirkuk, Iraq, to a D.H.9A of No. 30 Squadron, Hinaidi, on July 8, Flying Officer Marcus Glanfield Penny, Royal Air Force, the pilot of the aircraft, and Lieut. George Donald Edward Heather, the Loyal Regiment, attached to 2nd Cavalry Regiment, Iraq Levies, were killed.

As a result of an accident at Charlton, Wiltshire, to an Avro of No. 1 Flying Training School, Netheravon, on July 14, John Ryan, Mate, Royal Navy, Flying Officer, Royal Air Force, the pilot of the aircraft, was killed.

British Seaplane Wrecked

A REPORT from Marseilles, on the 9th inst., states that an Italian sailing vessel, which had arrived at that port, picked up, in 42° Lat. N. and 4° Long. E., a wrecked British seaplane on which were three British airmen. Continuing her journey, the sailing vessel was met by a British destroyer, to which the airmen were transhipped.



SPORT AND THE INDUSTRY. The H.G. Hawker Athletic Club held their second annual sports meeting under A.A.A. Rules on July 11. The Fitting Department again won the Sopwith Cup for the Inter-departmental Tug-of-War Competition, whilst the Machine Shop retained the Sigrist Trophy in the Relay Race. The Mallite Aggregate cup was won by the Erecting Shop, whilst J. Ross won the individual aggregate prize, being successful in six events. The Hon. Mrs. T. O. M. Sopwith, accompanied by Mr. T. O. M. Sopwith, C.B.E., joint managing director, presented the prizes. Our picture shows the Slow-speed Cycle Race

WIRELESS AND FORMATION FLYING

IN view of the wide-spread interest aroused by the "Aerial Drill by Wireless" demonstration, which formed one of the principal events at the last Royal Air Force Display at Hendon, we think the following notes concerning this subject, which we have received from the Marconi Co. will be appreciated by many of our readers.

Although the demonstration referred to above was the first of its kind to be performed in public, work of this nature has been in the process of development on the part of the R.A.F. for some considerable time past, but we think we are correct in stating that it is only of comparatively recent date that it has reached a really practical stage.

The problem of the application of wireless to fighting aeroplanes, in which the compactness of apparatus is of vital importance, has also engaged the attention of the Marconi Company for some time past, and that company has now developed apparatus—the Marconi A.D.5 set—using a fixed

when flying. The set is particularly suitable for use in single-seater and two-seater fighting machines for the purpose of communicating with other machines or for communicating with ground stations.

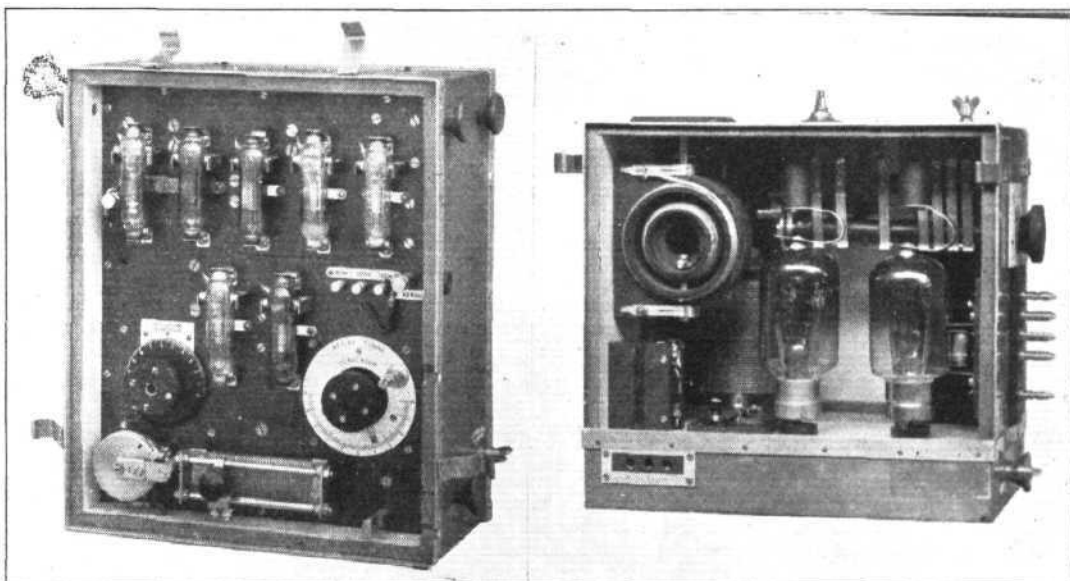
The single-seater scout or fighting machine can be considered as the first line of defence in aerial warfare. It patrols either alone or in formation with other machines the higher regions of hostile "territory," chiefly on "offensive" patrol work to destroy, and keep the air as far as possible clear of hostile aircraft. This enables the larger type of aircraft flying in the lower regions to carry out its work with as little interference as possible.

As the machines usually fly in formation, owing to the fact that in aerial warfare there is safety in numbers, each machine cannot act individually, otherwise the value of the formation is destroyed. Therefore, there is always a "leader," and other machines must follow and obey him.

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■ **Wireless and Formation Flying:** The Marconi wireless receiving and transmitting set referred to in the accompanying article. On the left is the short-wave receiver, type A.D.5, and on the right is the short-wave transmitter (A.D.5); a fixed aerial is used with this apparatus, and not the usual trailing aerial

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aerial, which meets the requirements of this class of aeroplane. No trailing aerial is required, the whole of the aerial system being permanently attached to, and insulated from, the wings and fuselage of the aeroplane. The aeroplane's power of manoeuvring is thus in no way impaired. In spite of the very limited proportions of such an aerial, a high degree of efficiency in radiation is maintained by the use of short wavelengths, which have the further advantage of freedom of interference from and with other aircraft and ground sets. In this set the transmitter and receiver are not combined in one case, but are each mounted as separate units. This feature has the advantage of enabling the transmitter or receiver to be installed by themselves if desired. The apparatus is extremely compact, and remote control arrangements enable the apparatus to be mounted in any odd corner of the machine without interfering with the ability of the pilot to operate and adjust the apparatus

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Aviation at Long Island (U.S.A.)

MITCHELL FIELD AVIATION authorities, Long Island, issued figures on July 9, which go to show that since June 7, 1923, there have been 31,363 flights from the aerodrome, covering 18,277 hours' flying time, calculated at an average speed of 100 m.p.h. Pilots of the Army Reserves and the National Guard have not, during this period, been involved in a fatal accident. Three fatal accidents did occur; the first when an aeroplane carrying an officer as passenger, side-slipped and crashed, the second when a mechanic fell from an airship landing rope, and the third when a sergeant was killed by a broken propeller in an aeroplane crash.

Pinedo Off Again

THE Marchese de Pinedo, the Italian Air Chief, who recently made a magnificent flight from Rome to Melbourne in a Savoia S.16 ter flying boat (400 h.p. Lorraine Dietrich), has resumed his aerial tour, *en route* for Japan. On July 14 he started from Melbourne, but shortly after was compelled to return. Continuing at 9 a.m. on July 16 he arrived at

If a formation is flying over hostile territory under a leader, and the leader suddenly observes a formation of hostile machines, he must convey to his formation, somehow or other, what he intends to do. The old method of accomplishing this by firing a pre-arranged signal with coloured lights is well known, but the enemy can soon learn what these various signals mean, and are at once on the alert and manoeuvre for the best fighting position. Moreover, the limited variety of signals which can be sent in this way makes this system of communication crude and inflexible. Thus wireless telephony communication lends itself at once to perfect liaison between the units of a squadron, owing to its quickness of operation and intelligibility without a knowledge of the Morse code.

The accompanying illustration shows one of the A.D.5 sets manufactured by Marconi's Wireless Telegraph Co., Ltd., of Marconi House, Strand, W.C.2.

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Sydney at 4 p.m. He left Sydney on the 20th, but once again minor engine trouble brought him back.

The History of Rigid Airships

THE July 14 issue of *Zeitschrift für Flugtechnik und Motorluftschiffahrt* commonly known as the "Z.F.M.," contains an article by Dr. Ing. Roeser, with a supplement by Dr. Ing. Müller, dealing with the development of rigid airships. The article is illustrated by 24 photographs and silhouettes of Zeppelin and Schütte-Lanz airships, and also contains tables of particulars, such as dimensions, capacity and useful load, of the entire series of German rigid airships. In view of the revived interest in airships this issue of the "Z.F.M." is well worth obtaining. It is published by R. Oldenbourg's Verlag of Munich.

Mid-air Collision

Two machines from the Chalon-sur-Saône School of Aviation collided when flying at a height of a few hundred feet near the school on July 17, and crashed to the ground. Both pilots and an instructor were killed.

ACCOUNTANT OFFICERS, ROYAL AIR FORCE

THE Air Ministry announces that an examination of candidates for commissions as accountant officers will be held in the latter part of September, 1925, under the scheme inaugurated in 1924 for entry into the commissioned ranks of the Accountant Branch of the Royal Air Force.

The number of vacancies to be filled immediately from this examination will probably be about twelve: and further appointments will be made at a later date to fill vacancies arising between this competition and that of next year.

Candidates must be between 22 and 26 years of age on October 1, 1925, but an extension up to 30 years of age may be granted in certain circumstances on the ground of previous service in the Forces.

Applications, which must be made on the prescribed form obtainable from the Secretary, Air Ministry, Kingsway, London, W.C. 2, should reach that department not later than August 15, 1925. Applications received after August 31, 1925, will not be accepted in any circumstances.

The examination will be held in London and will comprise:

- (1) An interview before a Selection Board.
- (2) A written examination in English and general knowledge.
- (3) A written examination in accountancy.

The written examination, for which a fee of £4 is payable, is conducted by the Civil Service Commissioners and will be held shortly after the interview. Part (2) of the examination will require no special preparation and will consist of essay writing and précis and questions to test the candidate's knowledge of matters of general interest. Part 3 will consist of book-keeping and accountancy, excluding partnership accounts and executorship accounts, the standard being that

of the final examinations of the Institute of Chartered Accountants and of the Society of Incorporated Accountants and Auditors. Copies of the papers set at the examination for accountant officers held in September, 1924, may be obtained from H.M. Stationery Office, Imperial House, Kingsway, London, W.C. 2, price 1s. 6d. net.

Candidates who from their application forms appear to be suitable will be invited to appear for interview by the Selection Board, and those who are passed by the Selection Board, and also by a medical board, will be admitted to the written examination.

Appointments will be offered to candidates according to the marks obtained in the competition. Successful candidates will be appointed as pilot officers on probation, and on satisfactory completion of a two months' period of instruction will be posted to a unit for accountant duties. At the end of twelve months' service they will, if their service has been satisfactory in all respects, be confirmed in their appointment and promoted to the rank of Flying Officer. Promotion beyond this rank will be by selection within an approved establishment.

The emoluments of accountant officers, which consist of a basic rate plus allowances, amount under present scales to £403 0s. 5d. (single) and £418 4s. 7d. (if married and eligible for married allowances) for a pilot officer, rising according to rank and length of service to £787 15s. 10d. (single) and £810 12s. 1d. (married) for a wing commander—the highest rank in the accountant branch for which provision is at present made. The detailed regulations and necessary forms of entry may be obtained on application to the Secretary, Air Ministry (S. 7), Kingsway, London, W.C. 2.

"Flygning"

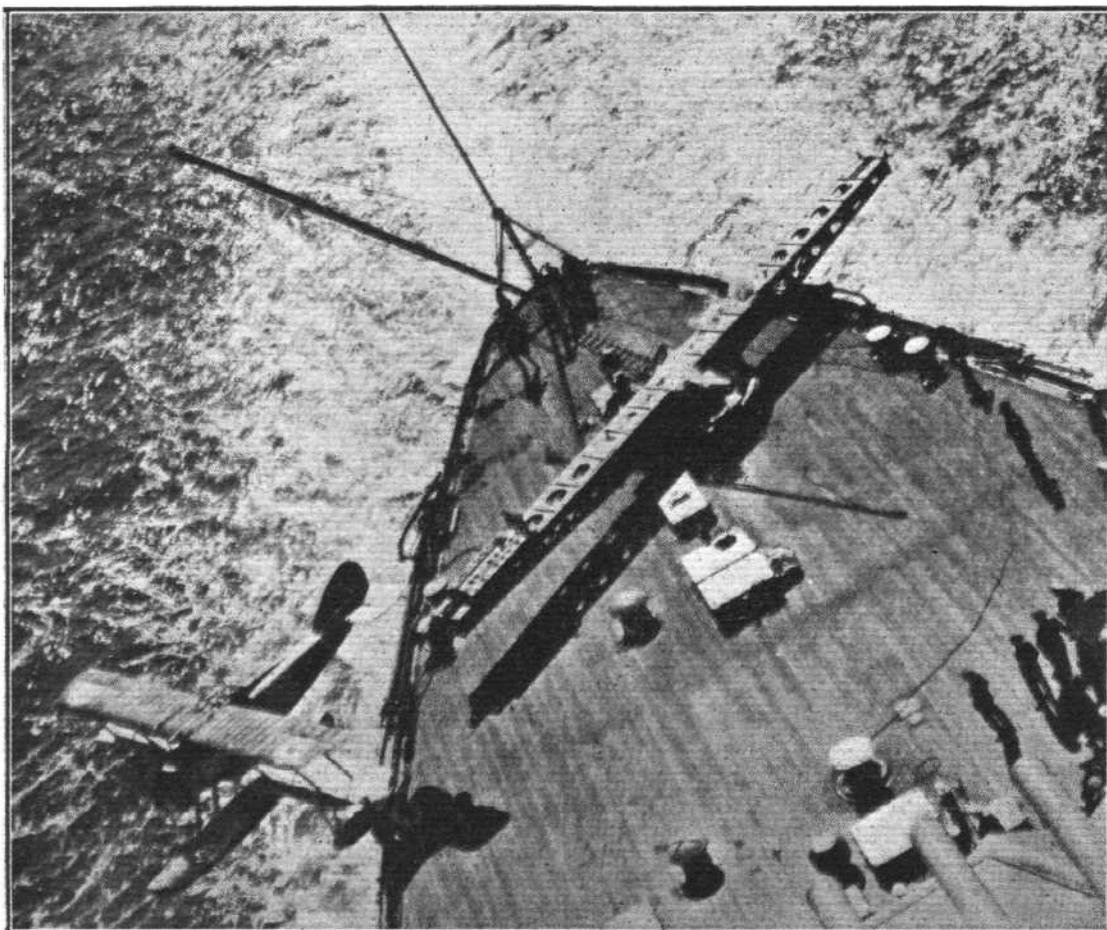
THE year 1925 is regarded in Sweden as marking the real beginning of Swedish aviation, the Swedish aviation service having now become an independent service, and Sweden having commenced in real earnest to take part in European air traffic. The time has therefore been thought propitious for reviving the Swedish aviation journal *Flygning* (Flying), which was published during 1920 and 1921, but which had to close down. The revived *Flygning* will appear as a monthly journal at first, but later it is hoped to publish it fortnightly. The editor is Herr Ingenjör G. V. Nordenswan,

and the offices are situated at Arsenalsgatan 8c, Stockholm. The first issue of the revived *Flygning* contains an article on air traffic, an illustrated description of a new Swedish light 'plane, an account, also illustrated, of some parachute experiments carried out at Malmslätt, an outline of Sweden's new organisation of her air force, and several other interesting articles.

The price of the new journal is 50 ore, or about 7d. We wish our resurrected Swedish contemporary every success, and trust it will form another link in the chain which binds Great Britain to the Scandinavian countries.

Launching by
Catapult: One of
the U.S. Navy
Vought UO-1
Spotting Sea-
planes being
launched by
means of a cata-
pult from the
deck of a warship
during the Pacific
Manœuvres.

Courtesy "Wright
Aircraft Builder."



THE ROYAL AIR FORCE

London Gazette, July 14, 1925.

General Duties Branch

The following are granted permanent commissions in ranks stated (July 15):—
Flight-Lieut. W. E. Knowlden (Lieut., Border Regt.); Flying Officer B. H. C. Russell. C. Walter is granted a short service commission as a Flying Officer with effect from, and with seniority of, July 1. The following Pilot Officers are promoted to rank of Flying Officer:—J. H. Woodin; June 15. N. Young, R. R. Reedman, E. A. McKinley-Hay, W. J. P. Sloan; June 19.

The following Pilot Officers are dismissed the service by sentence of General Court-martial:—G. A. Cruickshank; June 22. E. L. Batson-James; July 4.

Pilot Officer on probation W. L. Mummery relinquishes his short service commission on account of ill-health; July 15.

Accountant Branch

Flight-Lieut. (acting Wing Commander) L. J. Lightfoot, O.B.E. (Maj., R.A.P.C.), relinquishes his temporary commission on return to Army duty; July 10.

ROYAL AIR FORCE INTELLIGENCE

Appointments.—The following appointments in the Royal Air Force are notified:—

General Duties Branch

Squadron Leaders: D. O. Mulholland, A.F.C., to Cadet College, Cranwell; 16.7.25. W. B. Farrington, D.S.O., to No. 84 Sqn., Iraq; 22.6.25. H. W. G. Jones, M.C., to No. 19 Sqn., Duxford; 23.7.25.

Flight Lieutenants: H. A. Smith, M.C., to No. 1 Sch. of Tech. Training (Boys), Halton; 15.7.25. V. Buxton, to Elec. and Wireless Sch., Flowerdown, 20.7.25. E. R. B. Playford, to No. 4 Sqn., S. Farnborough; 20.7.25. W. E. Knowlden, to No. 100 Sqn., Spittlegate; 20.7.25. C. R. Smythe, to No. 19 Sqn., Duxford; 20.7.25. W. E. Reason, to No. 2 Flying Training School, Digby; 14.7.25. E. R. Openshaw, to Hqrs., Coastal Area; 22.7.25.

Medical Branch

Flight-Lieut. T. C. St. C. Morton, M.D., D.T.M. and H., is promoted to rank of Squadron-Leader; July 9.

Reserve of Air Force Officers

The following Pilot Officers are promoted to rank of Flying Officer:—
E. P. Clacey; March 23. C. C. Thurrell; April 21. S. W. Lummis; May 11. E. Crewdson, M.C.; May 18. A. H. Partner; May 23. G. S. Fiske; May 27. A. J. Plummer; May 27. W. C. Kilvington (Major, R.A.R.O.); May 27. W. Wilson; June 2. W. Mellor; June 9. M. A. Vachon; June 16. G. H. Smith; June 16. J. S. Napper, D.C.M.; June 20. H. G. Harper; June 23. J. J. B. Rutter; June 23. C. W. Sutcliffe; June 30. Pilot Officer L. F. Cubitt is transferred from Class A to Class B; June 23 (substituted for the Gazette, June 23). Flying Officer M. H. Findlay, D.S.C., D.F.C., is confirmed in rank; July 13.

Memorandum

The permission granted to 2nd Lieut. J. Luckley to retain his rank is withdrawn on his re-enlistment in the Supplementary Reserve, Army; June 25.

Stores Branch

Flight Lieutenants W. C. Green, to No. 5 Flying Training Sch., Sealand; 20.7.25. W. R. Fairbairn, to Mechanical Transport Repair Depot, Shrewsbury; 20.7.25.

Medical Branch

Squadron Leader J. M. A. Costello, M.C., M.D., M.Sc., to R.A.F., British Hospital, Iraq; 20.6.25.
Flight Lieutenant J. B. Woodrow, to No. 41 Sqn., Duxford; 28.6.25.

IN PARLIAMENT

Cost of Airship Service

MR. VIANI, on July 9, asked the Secretary of State for Air the estimated cost of the R.101 and of the Cardington airship; the estimated cost of enlarging the hangar at Cardington; the estimated cost of the new mooring mast at Cairo; and the estimated cost of the complete air base at Karachi?

Sir Samuel Hoare: In answer to the first part of the question, R.101 is the Cardington airship, and I presume the hon. member intends to refer to the two new airships, R.100 and R.101. The contract price for R.100 is £300,000, and in addition a contribution of £50,000 has been made towards the capital expenditure incurred by the contractors. The estimated cost of construction of R.101 at Cardington is £200,000 in direct charges, not including overheads, which cannot at present be estimated with any degree of exactitude. The answers to the second, third and fourth parts are £95,000, £46,000 and £235,000, these figures being all approximate and the last especially tentative. The Egyptian mast is to be at Ismailia, not Cairo.

Mr. Viant asked if for the flights to Egypt and the East hydrogen gas will be used; the cost of hydrogen gas in this country and the estimated cost in Egypt and India; if for these flights it is proposed to replace part of the hydrogen with helium and, if so, what proportion of helium will be used; and what is the estimated cost of helium gas?

Sir S. Hoare: It is proposed to use hydrogen gas for the experimental flights to Egypt and the East without any admixture of helium, as helium has only been produced commercially in the United States, and its export from that country has been prohibited. The cost of hydrogen gas produced at the Royal Airship Works by the water-gas process is about 10s. per 1,000 cub. ft. If produced by a silicic plant such as is installed at Pulham, the cost is about 30s. per 1,000 cub. ft. Silicic plants are being installed in Egypt and India, as their capital cost is much less than that of water-gas plants. It is impossible until further experience has been acquired to give any reliable estimate of the cost of hydrogen gas in Egypt and India.

R.A.F. Accidents

SIR F. SYKES, on July 14, asked the Secretary of State for Air whether he can furnish information to account for the rise from an annual average of 17 in the period January 1, 1920, to March 31, 1924, to a total of 71 in the year ending March 31, 1925, in flying accidents attributable to causes other than engine or installation failure, error of judgment, or defect in aircraft design, construction, or maintenance?

Sir S. Hoare: In a comparison of the figures for the periods January 1, 1920, to March 31, 1924, and April 1, 1924, to May 31 (not March), 1925, regard must be had to the increasing amount of flying carried out in each period, and the fact that the Air Force is in process of being trebled in size as compared with its strength three years ago. If this is allowed for, further analysis of the figures referred to in the question show no marked increase in the later period in the number of accidents due to any other cause than weather. The proportionate increase in this type of accident is probably accounted for by an increased tendency to fly under less favourable weather conditions, but the field of comparison is too small to justify any very definite conclusion.

War Air Stations and Aerodromes

SIR F. SYKES asked the number of State-owned air stations disposed of after the war in Great Britain and the sums realised from their sale and that of the buildings erected thereon; the number of aerodromes in State occupation at the end of the war which have been handed back to the landowners; and the estimated value of the State-owned buildings thereon and the sum realised thereby.

Sir S. Hoare: The number of air stations relinquished since the termination of the war is 146, of which five were disposed of to the Irish Free State, and three and two handed over to the War Office and the Admiralty respectively. The records of my Department do not enable me to state in how many cases the aerodromes were handed back to the landowners or disposed of to new purchasers. To obtain this information or that required by the other parts of my hon. and gallant friend's question in regard to the sums realised and the estimated value of the buildings, would involve the systematic search of some hundreds of files and the detailed scrutiny of the records of the various sales, in some of which many different purchasers were concerned, and in the circumstances I do not think that the heavy labour involved would be justified.

Civilian Airmen and Decorations

SIR F. SYKES asked whether the Distinguished Flying Cross, the Air Force Cross, and the Distinguished Flying and Air Force Medals can be awarded

in respect of the distinguished services in flying by civilians; and, if so, how many such decorations and medals have been so awarded during the past four years in respect of civilian aeroplane services?

Sir S. Hoare: As regards the first part of the question, the Air Force Cross and medal, but not the Distinguished Flying Cross and medal, can be awarded to civilians who render distinguished service to aviation in actual flying. As regards the second part, no awards of the decoration or medal have been made during the past four years in respect of civilian aeroplane services; an Air Force medal was, however, recently awarded to a civilian for conspicuous devotion to duty in circumstances of exceptional difficulty and danger, in connection with the accident to the R.33.

British and French Air Forces

SIR WILLIAM DAVISON, on July 15, asked the Secretary of State for Air what is the total number of officers, men and machines on the strength of the British and French Air Forces, respectively?

The Under-Secretary of State for Air (Major Sir Philip Sassoon): The strength of the Royal Air Force on July 1 last was 3,321 officers, 109 cadets and 29,561 airmen; as regards machines, there were (including the equivalent of about nine squadrons for the Fleet air arm) 55 squadrons of an average establishment of 12 machines each. The strength of the French Air Service, according to the latest information available, is approximately 140 squadrons of an average of nine machines each; it is not possible to give the figures for personnel, for the reasons explained in my answer to Mr. Lansbury on February 23 last.

Fatal Accidents

SIR W. DAVISON asked the Secretary of State for Air how many fatal accidents occurred during the past year in the Royal Air Force; in how many cases were these due to defects in engines or machines; and whether he can give similar information with regard to the French Air Force?

Sir P. Sassoon: As regards the first part of the question, the total number of fatal accidents in the Royal Air Force during the period July 9, 1924, to July 8, 1925, was 44. As regards the second part, two were attributed to defects in engines and none to defects in machines. As regards the last part, I regret that no information can be given.

Sir W. Davison: Can my hon. and gallant friend assure the House that in the opinion of the Air Ministry the machines used by the Royal Air Force are in every way equal to the machines used by the French Air Force in air-capacity and air-worthiness?

Sir P. Sassoon: As far as I am aware, they are.

Underground Hangars

SIR GERALD STRICKLAND asked the Secretary of State for Air whether he has received information that certain Powers in the Mediterranean have already largely adopted hangars that are underground and bomb-proof; and whether he is prepared to obtain estimates for similar hangars in parts of the Empire where local conditions make such constructions possible or economical?

Sir P. Sassoon: The answer to the first part of the question is in the negative. As regards the second part, the desirability of constructing underground hangars where local conditions are favourable has already received careful consideration, but, generally, the cost of such constructions, as compared with that of the normal design of hangar, would render such a scheme prohibitive.

Sir G. Strickland: Is the hon. gentleman aware that the inadequacy of the air defences of the key bases along our main lines of communication in the Mediterranean for imports and exports is causing considerable alarm?

R.A.F. Expansion Scheme

SIR F. SYKES asked the Secretary of State for Air if he will state the sum that has been spent on the acquisition of new air stations and building thereon under the Royal Air Force expansion schemes of 1922 and 1923, and the estimated further payments that will be required for land and buildings, respectively, for that purpose under the existing scheme?

Sir S. Hoare: If my hon. and gallant friend means to include under new stations war aerodromes which have been re-occupied under the expansion scheme, the sums spent to April 1, 1925, are as follows:—Land and buildings purchased with the land, £90,000; works on these sites, £105,000; works on stations already occupied by the Royal Air Force, £245,000. Provision included in the Estimate for the current year is:—Land, etc., £350,000; works, £930,000. Expenditure at a similar or slightly increased rate for five or six years will probably be required to complete the scheme.

British Standard Specifications

THE British Engineering Standards Association have just issued two new British Standard Specifications, viz., "B.S.S. for Brass Bars and Sections Suitable for Forgings and Drop Forgings," No. 218, 1925, and "B.S.S. for Soft Solders," No. 219, 1925. In the former specification the copper content of this material is specified to be not less than 58 per cent., and the minimum tensile strength 20 tons per sq. in., with an elongation of not less than 25 per cent. Further specifications covering naval brass bars and sections, high speed screwing and turning brass bars and two grades of high tensile brass bars and sections are now in preparation. The second Specification covers nine grades of tin-lead solder. These solders are intended for electrical purposes, tinsmiths' and coppersmiths' work, steel tube joints, lead cable wiped joints, etc., and typical purposes for which the various grades are particularly suitable are given in the table of analyses for the guidance of purchasers ordering solder for specific uses. Apply to Publications Dept., 28, Victoria Street, London, S.W. 1. Price 1s. 2d. each post free.

Hawkers for Denmark

We understand that the Danish Army Flying Corps has bought three aeroplanes from the Hawker Engineering Co., of Kingston-on-Thames. Furthermore, the Danish Army Flying Corps has taken out a licence to build the same type of aeroplane in Danish factories.

R.A.F. v. Civil Service Cricket

THE two-day Cricket match between the R.A.F. and the Civil Service, held last week on the Army Sports Ground at Leyton, ended in a drawn game. On the first innings, thanks mainly to a score of 152 by A. E. S. Rippon, the Civil Service held a lead of three runs. The highest score for the R.A.F. was put up by Flying-Officer E. V. H. Hudson, with 85. Score:—Civil Service, first innings, 337; second innings, 129. R.A.F., first innings, 334.

R.A.F. Lawn Tennis

THE Lawn Tennis Championships of the R.A.F., which have been in progress during last week, at Queen's Club, W. Kensington, were concluded on Saturday.

R.A.F. Doubles Championship.—Final round.—Squadron Leader H. J. F. Hunter and Squadron-Leader R. E. Saul (holders) beat Flight-Lieut. C. E. Williamson-Jones and Flying-Officer E. D. H. Davies (6—1, 6—1, 10—8).

R.A.F. Singles Championship.—Final round.—Flying-Officer C. F. Roupell (holder) beat Squadron-Leader H. J. F. Hunter (6—3, 6—3, 4—6, 7—5).

R.A.F. Veterans' Cup.—Final Round.—Squadron-Leader P. Young beat Wing-Commander W. R. Read (6—2, 6—3).

R.A.F. Plate Singles.—Final round.—Flight-Officer E. D. H. Davies (holder) beat Squadron-Leader F. G. M. Williams (6—4, 6—4).

A Doctor's 'Plane

DR. WHITEHEAD REID, of Canterbury, who was a competitor in the King's Cup Race round Britain some years ago, still maintains a healthy interest in aviation, and, despite the fact that he finds his motor-car rather more convenient for professional visits, he nevertheless utilises his S.E.5 in securing financial assistance for hospitals and other charities by carrying "paying" passengers.

IMPORTS AND EXPORTS, 1924-1925

AEROPLANES, airships, balloons and parts thereof (not shown separately before 1910). For 1910 and 1911 figures see "FLIGHT" for January 25, 1912; for 1912 and 1913, see "FLIGHT" for January 17, 1914; for 1914, see "FLIGHT" for January 15, 1915; for 1915, see "FLIGHT" for January 13, 1916; for 1916, see "FLIGHT" for January 11, 1917; for 1917, see "FLIGHT" for January 24, 1918; for 1918, see "FLIGHT" for January 16, 1919; for 1919, see "FLIGHT" for January 22, 1920; for 1920, see "FLIGHT" for January 13, 1921; for 1921, see "FLIGHT" for January 19, 1922; for 1922 see "FLIGHT" for January 18, 1923; for 1923, see "FLIGHT" for January 17, 1924; and for 1924, see "FLIGHT" for January 22, 1925.

Imports.		Exports.		Re-Exports.	
1924.	1925.	1924.	1925.	1924.	1925.
Jan. ... 2,213	3,546	52,239	83,728	2,219	291
Feb. ... 920	985	26,349	85,639	335	20
Mar. ... 11,381	—	34,113	56,881	509	9,355
Apr. ... 373	321	56,998	78,041	6,014	6,732
May ... 3,426	560	125,138	74,844	4,162	15,278
June ... 1,219	190	87,629	71,009	2,115	667
19,532	5,602	382,466	450,142	15,354	32,343

SOCIETY OF MODEL AERONAUTICAL ENGINEERS (London Aero-Models Association)

ON Saturday, July 18, the Lady Shelley Cup Competition was held at the Sudbury Ground under very unfavourable flying conditions.

The Competition was for Models of the "Dunne" type, using tractor screws, the formula "duration loading" being employed. Considering this was a new type of competition, both the number of entrants and the results were distinctly encouraging. The first three places are given below:—

Name.	Weight.	Loading.	√L	Best Duration.	Total number of points.
1 D. A. Pavely ...	8 ozs.	5.08	2.23	24 secs.	53.5
2 S. C. Hersom ...	7.25 "	5.29	2.3	19.8 "	45.5
3 F. de P. Green...	7.0 "	4.22	2.05	14.4 "	28.8

B. K. JOHNSON,

Competition Secretary

PUBLICATIONS RECEIVED.

British Standard Dimensions for Wide-Type Concentric Piston Rings for Automobiles. (No. 5003-1925), April, 1925. Price 1s. net; post free, 1s. 2d. *British Standard Dimensions for Carburettor Flanges, 2-Bolt Type.* (No. 5029-1925), May, 1925. Price 1s. net; post free, 1s. 2d. *British Standard Method for the Calibration of Carburettor Jets for Aircraft and Automobile Engines.* (No. 5030-1925), June, 1925. Price 1s. net; post free, 1s. 2d. British Engineering Standards Association, 28, Victoria Street, Westminster, London, S.W. 1.

The Ultimate Island. By L. de Giberne Sieveking. George Routledge and Sons, Ltd., 68-74, Carter Lane, E.C. Price 7s. 6d. net.

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AERONAUTICAL PATENT SPECIFICATIONS

Abbreviations: Cyl. = cylinder; i.c. = internal combustion; m. = motor. The numbers in brackets are those under which the Specifications will be printed and abridged, etc.

APPLIED FOR IN 1924

Published July 16, 1925

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22,982. SIEMENS SCHUCKERTWERKE GES. Rotors for asynchronous motors. (222,860.)
23,700. B. BISCHOF and C. HACCUS. Engine with rotating cyls. arranged radially. (223,553.)
28,313. D. NAPIER & SON, LTD., and G. S. WILKINSON. * Variable-pitch propellers. (235,778.)

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